
**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA**

STATE OF OKLAHOMA

Plaintiff

v.

CASE NO. 05-CV-329-GKF-SAJ

TYSON FOODS, ET AL.

Defendants

DECLARATION OF RICHARD W. DUNFORD, Ph.D.

The undersigned, Richard W. Dunford, Ph.D., does declare and state:

Qualifications and Experience

1. I completed a Ph.D. in Agricultural Economics, specializing in environmental and natural resource economics, at the University of Wisconsin in Madison in 1977. I also received a M.A. in Agricultural Economics and a M.A. in Economics from the University of Wisconsin in Madison in 1975. In 1971 I received a B.A. in Economics from the University of Missouri in Columbia.

2. Upon completing my Ph.D. in 1977, I joined the faculty of the Agricultural Economics Department at Washington State University (WSU) in Pullman as an Assistant Professor. I taught a variety of undergraduate and graduate environmental and natural resource economics classes at WSU. I also advised M.A. and Ph.D. students and served on their thesis and dissertation committees. I was granted tenure and was promoted to Associate Professor in 1983.

3. I began working as a Senior Economist in the Center for Economics Research at the Research Triangle Institute (RTI) in Research Triangle Park, North Carolina, in 1986. RTI is a large, not-for-profit, contract research organization. I was later promoted to Program Director at RTI. In 1994 I was a co-founder and Vice President of Triangle Economic Research (TER), a small economics consulting firm in Durham, North Carolina. TER became a whole-owned subsidiary of Blasland, Bouck & Lee (BBL) in 2001. I continued as a Vice President at TER and was a Vice President of BBL starting in 2001. I left TER & BBL in July 2005 and founded Environmental Economics Services (EES) in Raleigh, North Carolina. I am the owner and only employee of EES.

4. From 1977 to the present I have authored 13 articles in peer-reviewed journals and 4 articles in other periodicals. I have also co-authored a book, published 6 chapters in other books, written more than 42 reports, and presented at least 26 papers at

professional meetings. I have been deposed several times and I have testified in three trials as an expert witness.

5. Under the authority of various statutes, government agencies acting on behalf of the public as trustees for natural resources can collect damages from companies for their injuries to natural resources and their services caused by releases of certain substances. By law, monetary recoveries for natural resource damages must be used to restore or replace the injured natural resources and their services.

6. I worked on my first natural resource damage (NRD) assessment in 1987. To date, I have worked on more than 50 such assessments. One of my NRD specialties is assessing damages to recreation activities from oil spills and hazardous-substance releases. For example, I contributed to or led an assessment of recreation damages on the following oil spills:

- 1988 Shell Oil spill (Martinez, CA)
- 1990 *American Trader* spill (Huntington Beach, CA)
- 1993 Tampa Bay spill (Tampa, FL)
- 1994 *Morris J. Berman* spill (San Juan, Puerto Rico)
- 1995 *Berge Banker/Skaubay* spill (Corpus Christi, TX)
- 1996 *Julie N* spill (Portland, ME)
- 1999 *New Carissa* spill (Coos Bay, OR)
- 2002 *Kyowa Violet* spill (Yap, Micronesia)
- 2004 *Torm Mary* spill (Neches River, TX)
- 2007 *Cosco Busan* spill (San Francisco, CA)

I also have contributed to or lead an assessment of recreation damages on the following rivers that were allegedly injured by hazardous-substance releases:

- Russian River (CA)
- Clark Fork River (MT)
- Fox River (WI)
- Housatonic River (MA)
- White River (IN)
- Passaic River (NJ)
- St. Louis River (MN)

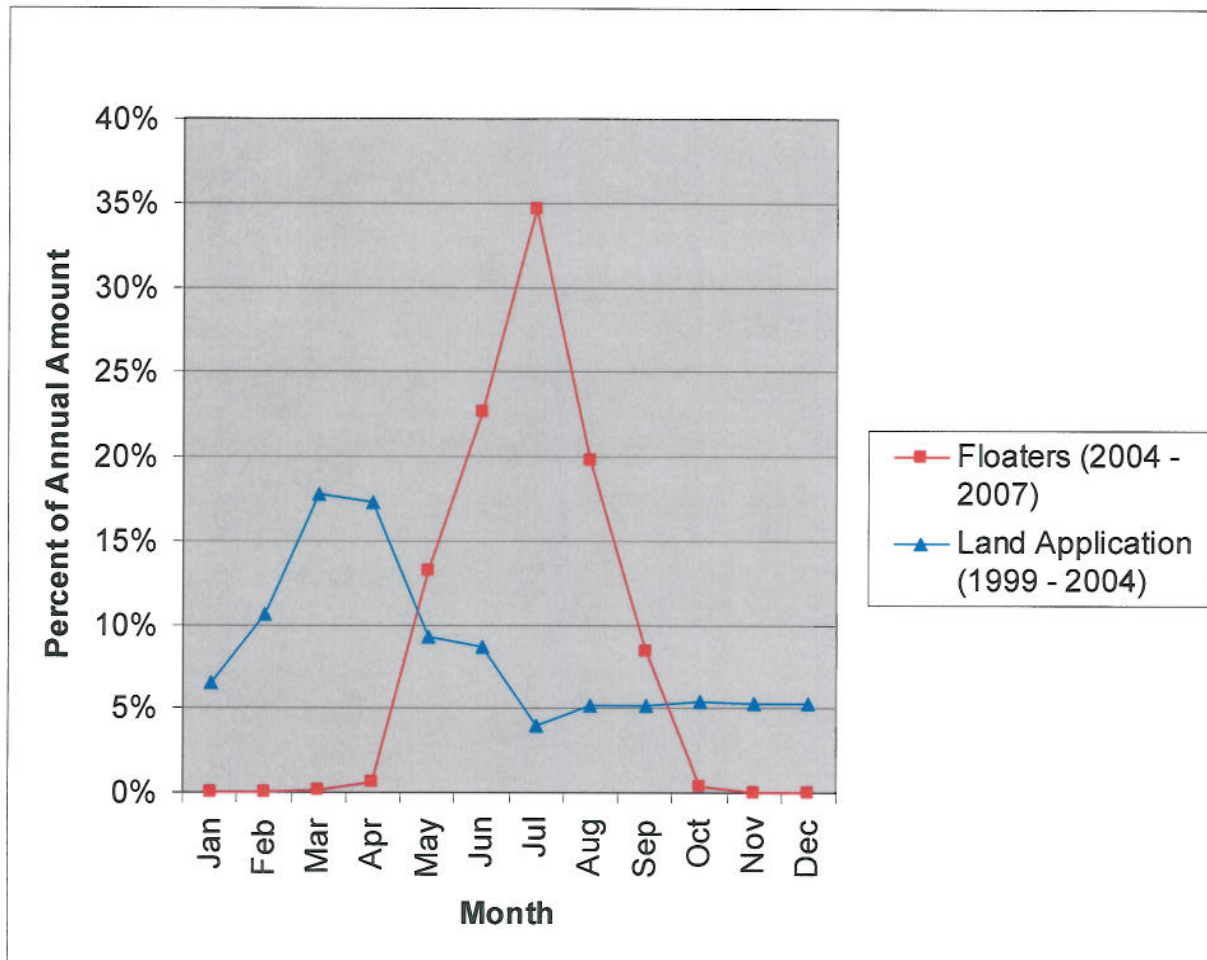
7. On the *State of Oklahoma v. Tyson Foods, et al.* case I have reviewed some publicly available documents, as well as some other documents provided by the plaintiff, including documents provided by Dr. Lowell Caneday and a draft transcript of his deposition testimony. I have visited the Illinois River and Lake Tenkiller on several

occasions. I have also rafted on the Illinois River. The opinions that I provide in the remainder of this declaration are based on my academic background, over 20 years of experience on more than 50 NRD cases, the documents that I have reviewed to date, my observations of floating in the Illinois River, and my own rafting in the Illinois River.

Most Floating Occurs When Poultry-Litter Land Applications Are Low

8. According to data provided by the plaintiffs, most floating occurs when poultry-litter land applications are low. Figure 1 provides a comparison of the timing of floating from 2004 through 2007 according to Caneday (2007b) and the timing of poultry-litter land applications from 1996 through 2004 according to Engel (2007). If the timing of the 1996 – 2004 patterns of poultry-litter land application is indicative of the 2004 – 2007 patterns, then the plaintiff's data yield the following results:

Figure 1: Monthly Percentage of Floaters & Land Application of Poultry Litter in the Illinois River Watershed



Source: Caneday 2007b (p. PI-Caneday00000042) &
Engel 2007 (p. PI-Engel00001539)

- Only 1% of annual floating occurs in January through April when over half (52%) of the poultry litter is land applied,
- 77% of the annual floating occurs in June through August when just 18% of the poultry litter is land applied,
- 99% of the annual floating occurs in May through September when less than one-third (32%) of the poultry litter is land applied,
- July is the most popular month for floating, with 35% of the annual total, while July has the lowest percentage for poultry-litter land application (4%).

In summary, the timing of floating on the Illinois River differs substantially from the timing of poultry-litter land applications.

9. If land-applied poultry litter is running off the land into the Illinois River as the plaintiff contends, then it is logical that much of that runoff would occur during or after significant precipitation (i.e., storm) events following the application. Most floaters will avoid floating during storm events for safety reasons. Furthermore, many outfitters will not allow their customers to begin their float during storm events. When storm events result in high flows in the Illinois River, then fewer people will be floating in the River when the runoff occurs because of safety concerns associated with storm debris, unpredictable currents, and other problems.

10. When storm events result in very high flows, the Oklahoma Scenic Rivers Commission's (OSRC's) Website for the Illinois River recommends the following floating restrictions, especially for less experienced floaters:

LOWER RIVER (below Diamondhead Resort)

River level	We recommend...
6 feet	that children 10 and under not go in canoes and switch to rafts.
6 feet 6 inches	that all switch to rafts.
7 feet 6 inches	that children 10 and under not go in rafts.
9 feet 6 inches	that all floating cease.

UPPER RIVER (above Diamondhead Resort)

River level	We recommend...
5 feet 6 inches	that children 10 and under not go in canoes and switch to rafts.
6 feet	that all switch to rafts.
7 feet	that children 10 and under not go in rafts.
9 feet 6 inches	that all floating cease.

Source: www.oklahomascenicrivers.net/safety.asp

11. In conclusion, if poultry litter runs off the land where it is applied during or after storm events as the plaintiff contends, very few floaters will be floating on the Illinois River during the storm events. If the storm events result in high flows on the Illinois River, then fewer floaters will be in the water when the run off occurs because of safety considerations. Dr. Caneday acknowledged this relationship in a supporting document for his affidavit, stating that “extremely high water during the primary floating season” affects the total number of floaters (Caneday 2007b, p. PI-Caneday00000042). He also acknowledged in his deposition that floaters tend to avoid high water flows (Caneday 2008, p. 20).

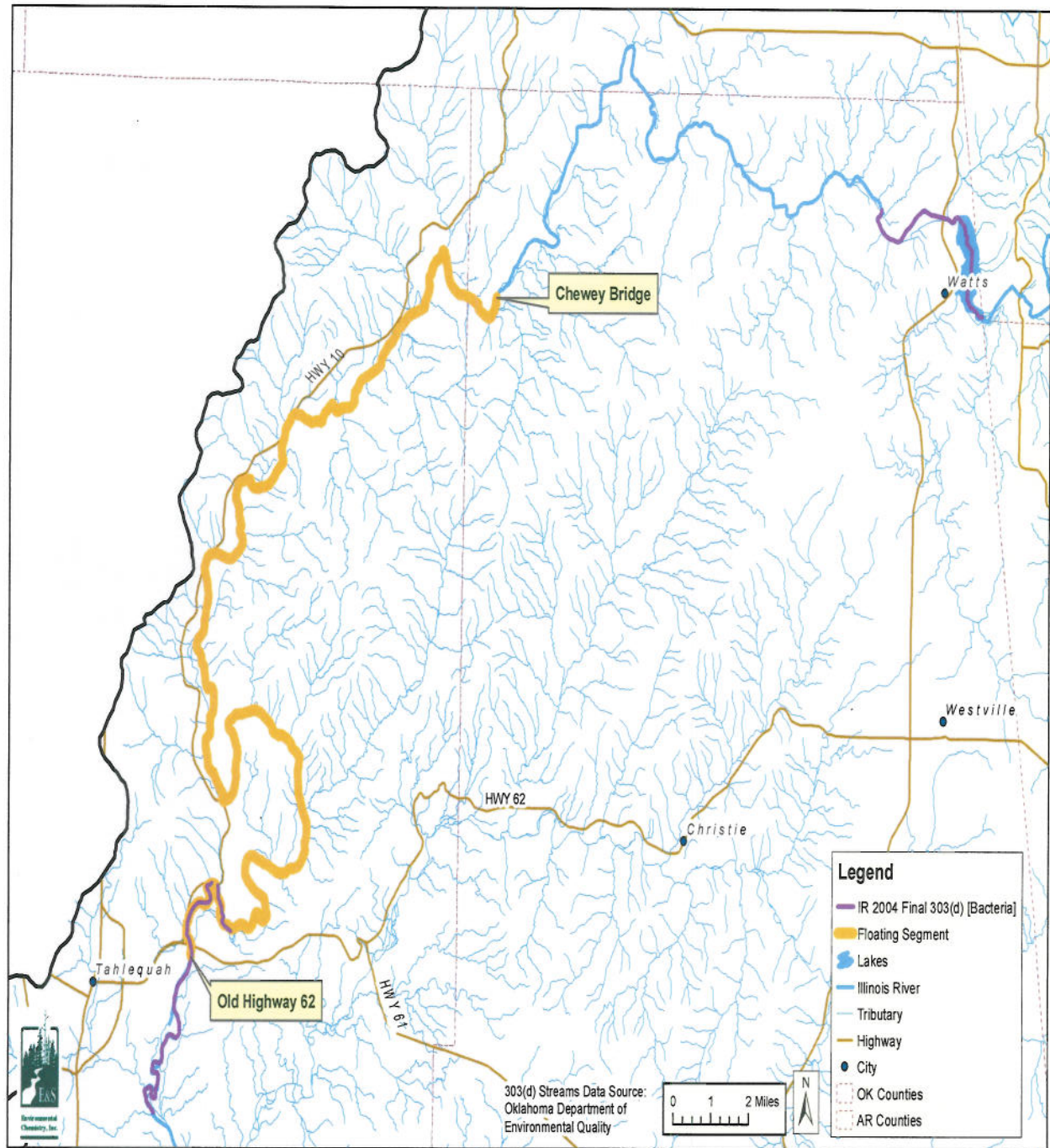
Most Floating Occurs in Unimpaired Segments of the Illinois River

12. In his affidavit, Dr. Caneday provided opinions on recreational use of the Illinois River, which he defined as beginning at Lake Francis (river mile 0.0) and ending at Horseshoe Bend (river mile 65.6) (Caneday 2007a, p. 3 and OSRC 2005). However, almost all floating on the Illinois River occurs between the Chewey Bridge (river mile 23.6) and Riverside Park (river mile 55.3) near the old Highway 62 Bridge (OSRC 2004; OSRC 2005), a total distance of 31.7 river miles. Figure 2 shows this floating segment in orange shading, while the purple shading shows the segment of the Illinois River designated as impaired for bacteria in 2004 by the Oklahoma Department of Environmental Quality (ODEQ). Figure 3 has similar shading for the floating segment of the Illinois River and the impaired segment based on the draft 2006 ODEQ data. Both figures show very little overlap in the floating and impaired segments. Specifically, only about 3 river miles (about 10%) of the 31.7 river miles where floating occurs were designated by ODEQ as impaired for bacteria (Sullivan 2008).

13. Just three major outfitters (i.e., All American Floats, Falcon Floats, and Sparrow Hawk Camp) are located on the impaired segment of the Illinois River (OSRC 2004).¹ These outfitters had 17% of the floaters in the 2006 – 2007 season according to OSRC data (see PI-Caneday-00002048). Often, outfitters drop off their customers at an upstream public access area and the floaters end their float at the outfitter’s location. If that scenario applies to the three major outfitters in the impaired segment, then floaters using these outfitters would start their float in unimpaired water but would end their float in impaired water using ODEQ’s designation of impaired river segments. In contrast, none of the floaters using the other eight major outfitters, representing over 80% of Illinois River floaters, would float in an impaired segment of the Illinois River based on the ODEQ’s designation of impaired river segments. Thus, almost all floating occurs in unimpaired Illinois River segments.

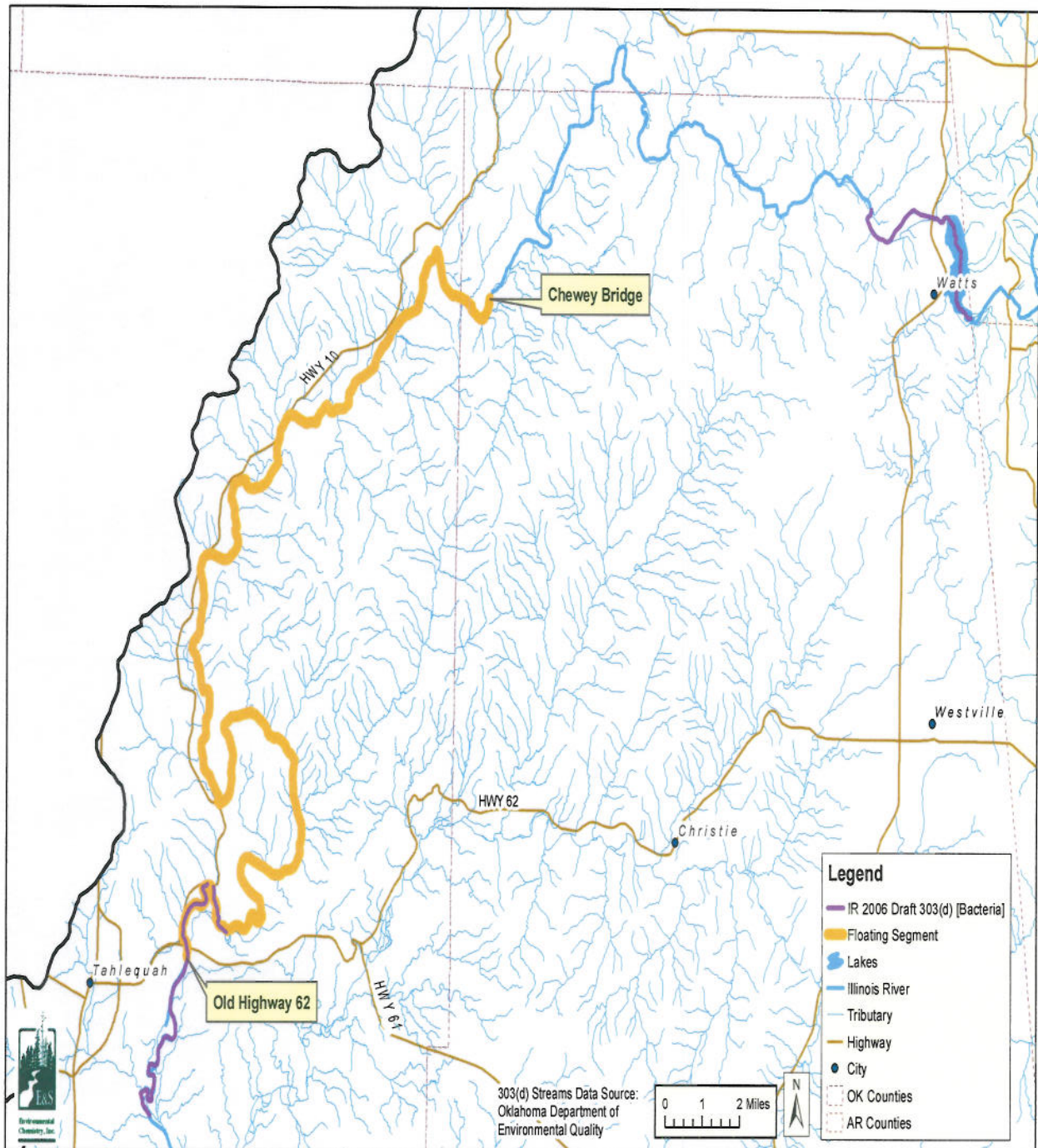
¹ I consider a “major” outfitter to be an outfitter with at least one percent of the annual floaters during the 2006 – 2007 float season based on OSRC data (see PI-Caneday00002048). There were 11 major outfitters in that season using this definition, accounting for 97.4% of the floaters.

Figure 2: Comparison of the Floating Segment and the Impaired Segments of the Illinois River Based on 2004 ODEQ Data



Source: E&S Environmental Chemistry 2008

Figure 3: Comparison of the Floating Segment and the Impaired Segments of the Illinois River Based on Draft 2006 ODEQ Data



Source: E&S Environmental Chemistry 2008

Dr. Caneday Overstates Floaters' Water Contact

14. Paragraphs 13 and 14 in Dr. Caneday's affidavit (2007a) imply that floaters are immersed in Illinois River water for the entirety of their float and then they are wet during their long drive home. As explained below, this overstates floaters' water contact during and after their float experience. More importantly, almost all of floaters' water contact is dermal. Full immersion in the Illinois River is infrequent and short-lived for almost all floaters.

15. Generally, only part of a floater's body is in contact with the water in the Illinois River on a float. For example, floaters' feet and legs get wet when they launch their raft or canoe and when they beach their raft or canoe for a break during their float. Water tends to get into the bottom of a raft or canoe during a float, so floaters' feet may be in water for an extended period of time during a float, but the majority of their body is not in contact with the water in Illinois River for extended periods of time.

16. Some floaters will get fully immersed in deep pools of the Illinois River when cooling off on hot days. Additionally, some floaters will get fully immersed unintentionally for a short period of time after capsizing, which is rarer with rafts than with canoes and kayaks. However, extended periods of full immersion are not possible while floating down the river, because it is too shallow in most places to allow full immersion. In general, the Illinois River is a floating river – not a swimming river.

Summary

17. Data provided by the plaintiff's own experts indicate that most floating occurs when land applications of poultry litter are low. If land-applied poultry litter is running off the land as the plaintiff contends, then most of this runoff will occur during or after storm events. However, floaters avoid using the river during storm events and high water flows. Additionally, almost all floating occurs in unimpaired Illinois River segments based on the ODEQ's designation of impaired river segments. Consequently, the extent of possible contact of Illinois River floaters with impaired water is minimal. Finally, Dr. Caneday's affidavit overstates the amount of direct water contact by Illinois River floaters and most of the direct water contact that occurs is dermal, not full immersion.

References

Caneday, Lowell. 2007a. Affidavit in *State of Oklahoma v. Tyson Foods, et. al.* U.S. District Court for the Northern District of Oklahoma.

Caneday, Lowell. 2007b. "Visitation Estimates: Illinois River Corridor and Lake Tenkiller." PI-Caneday00000042 through PI-Caneday00000047 in *State of Oklahoma v. Tyson Foods, et. al.* U.S. District Court for the Northern District of Oklahoma.

Caneday, Lowell. 2008. Deposition in *State of Oklahoma v. Tyson Foods, et. al.* case on February 5, 2008.

E&S Environmental Chemistry. 2008. "Maps Showing the Floating and Impaired Segments of the Illinois River in 2004 and 2006."

Engel, Bernard. 2007. "IRW Land Disposal Timing: 1999 - 2004." PI-Engel00001539.

Oklahoma Scenic Rivers Commission. 2004. *Illinois River Map*.
www.oklahomascenicrivers.net/files/2004_floaters_guide_map.pdf

Oklahoma Scenic Rivers Commission. 2005. *2005 Floater's Guide: Illinois River Series*. www.oklahomascenicrivers.net/files/2005_floaters_guide.pdf

Sullivan, Timothy. 2008. Personal communication with Richard W. Dunford, Environmental Economics Services, on February 5, 2008

Billing Rate

18. My billing rate for this case is \$240 per hour.

Date: February 8, 2008

A handwritten signature in black ink that reads "Richard W. Dunford". The signature is written in a cursive, flowing style.

Richard W. Dunford, Ph.D.

Richard W. Dunford, Ph.D.

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Employment Chronology

2005 – Present	Owner (founder) Environmental Economics Services Raleigh, NC
1994 to 2005	Vice President (co-founder) Triangle Economic Research Durham, NC
1986 to 1994	Senior Economist/Program Director Center for Economics Research Research Triangle Institute Research Triangle Park, NC
1977 to 1986	Assistant/Associate Professor Department of Agricultural Economics Washington State University Pullman, WA
1983 to 1984	Consultant in Residence Environmental and Natural Resources Policy Division Congressional Research Service Library of Congress Washington, DC
1973 to 1974	Project Specialist Department of Agricultural Economics University of Wisconsin at Madison Madison, WI

Education

Ph.D., 1977, Agricultural Economics, University of Wisconsin, Madison, Wisconsin
M.A., 1975, Agricultural Economics, University of Wisconsin, Madison, Wisconsin
M.A., 1975, Economics, University of Wisconsin, Madison, Wisconsin
B.A., 1971, Economics, University of Missouri, Columbia, Missouri

Key Projects

Leader or co-leader on the following projects/cases:

- “Net Environmental Benefit Analysis of Capping the Middle Reach of Bayou Trepagnier” (Motiva Enterprises)
- “Groundwater NRD Settlement Support on the Questa Mine” (Molycorp)
- “Groundwater NRD Settlement Support on ConocoPhillips Sites in New Jersey” (ConocoPhillips)
- “Groundwater NRD Support for the Cyprus Tohono Mine in Arizona” (Cyprus Tohono Corporation)
- “Economic Impact Analysis of Proposed Critical Habitat Designation for the Southwestern Willow Flycatcher” (Phelps Dodge Corporation)
- “Groundwater NRD Settlement Support on Chevron Sites in New Jersey” (Chevron)
- “Cooperative NRD Assessment Support on the Morenci, Tyrone, Chino, & Cobre Mines” (Phelps Dodge Companies)
- “Recreation Losses from the 2004 *Torm Mary* Oil Spill in Port Neches, Texas” (Anchor Marine Claims Service representing Skuld P&I Club)
- “Habitat Equivalency Analysis Support on the 1994 Big Creek Fire in the Sierra National Forest” (Stevens & O’Connell representing Southern California Edison)
- “NRD Support on the 2002 *Kyowa Violet* Incident in Yap, Micronesia” (Carlsmith Ball representing UK P&I Club)
- “Habitat Equivalency Analysis of Remediation Alternatives for the 4H Platform Shell Mounds” (ChevronTexaco)
- “Economic Support on the Potential Natural Resource Damages from Hazardous-Substance Releases at the St. Louis River/Interlake/Duluth Tar (Minnesota) Superfund Site” (PRP Group)
- “Potential Groundwater Damages from Releases from the Hollis Road (SC) Site” (Spriggs & Hollingsworth representing Northrop Grumman Corp.)
- “Recreation Losses from the 2002 *Ever Reach* Oil Spill in Charleston, South Carolina” (Trimar Defense Services representing Gard Services)
- “Trespass Damages from the 1999 *New Carissa* Grounding in Oregon” (Three law firms representing Britannia P & I Club)
- “Development of HEA Primer” (ChevronTexaco)

- “Economic Support on the 2002 Oil Spill in St. Eustatius” (Steers/Cariconsult International)
- “Groundwater Damages at the South Valley Superfund Site in New Mexico” (General Electric)
- “Economic Support on the NRD Claim for the Combe Fill South Landfill Near Chester, New Jersey” (PRP Group)
- “Natural Resource Damages from a 1999 Hazardous Substance Release in the White River (Indiana)”
- “Potential Groundwater Damages from Hazardous Substance Releases at SRSNE’s Facility in Southington, Connecticut” (Consortium of companies)
- “Creel/Angler Survey on the Lower Passaic River” (Chemical Land Holdings)
- “Potential Natural Resource Damages from Hazardous Substance Releases at Hydrite Chemical’s Facility in Cottage Grove, Wisconsin” (Consortium of insurance carriers)
- “Human Use Compensatory Restoration Strategy for Onondaga Lake” (Honeywell International)
- “Recreation Losses from the 1999 *New Carissa* Grounding in Oregon” (Garvey, Schubert, & Barer, representing Britannia P & I Club)
- “Review of New Jersey’s Groundwater Damage Assessment Formula” (New Jersey Site Remediation Industry Network)
- “Review of Puerto Rico’s Tax Loss Claim from the 1994 *Morris J. Berman* Oil Spill in Puerto Rico” (Bogle and Gates, representing Metropolitan)
- “NRD Support on the 1995 *Skaubay/Berge Banker* Oil Spill in Texas” (Eastham Watson Dale & Forney, representing Gard)
- “Review of NOAA Compensatory Restoration Guidance Document” (Ad Hoc Industry Group)
- “NRD Support for the 1996 *Julie N* Oil Spill in Maine” (Burke and Parsons, representing Gard)
- “Review of Trustee’s Damage Assessment for the 1994 *Morris J. Berman* Oil Spill in Puerto Rico” (Bogle and Gates, representing Met Life)
- “Economic Support for Underground Petroleum Contamination in Avila Beach, California” (UNOCAL)
- “Litigation Support for Third-party Claims from the 1996 *North Cape* Oil Spill in Rhode Island” (Freehill, Hogan & Mahar, representing West of England)
- “Support for NRDA Guidance Development” (Oak Ridge National Laboratory for U.S. Department of Energy)

- “Review of NRDA Inc. Report on Natural Resource Damages from a Central California Oil Spill” (Ad Hoc Industry Group))
- “Review of Trustee’s Damage Assessment for Two Coral Reef Groundings in Micronesia” (Beak Consultants Inc. for Japan P & I Club)
- “Natural Resource Damage Support for Diluent Releases at the Guadalupe Oil Field in California” (UNOCAL)
- “Review of Trustees’ Estimate of Sport Fishing Damages Resulting from Acid Mine Drainage” (confidential client)
- “Review of Trustees’ Use Damage Estimates for the 1990 *American Trader* Oil Spill in California” (Cogswell, Woolley, Nakazawa & Russell, representing American Trading and Transportation Co.)
- “Preliminary Assessment of On-Post Biota Impacts from Hazardous Substance Releases at Rocky Mountain Arsenal” (U.S. Army)
- “Review of Trustees’ Analysis of Use Damages from the *Jacquelyn L* Grounding in Florida” (Fertig and Gramling)
- “Natural Resource Damages from the 1993 Tampa Bay Oil Spill in Florida” (Freehill Hogan & Mahar, representing West of England)
- “NRDA Guidance Implementation Project: Savannah River Site” (U.S. Department of Energy)
- “Review of NOAA’s Report on Commercial Shipping Losses from the 1990 *Shinoussa* Oil Spill in Texas” (Royston, Razor, Vickery & Williams, representing Transport Mutual Services)
- “An Experiment on the Existence and Magnitude of Nonuse Values for Non-environmental Goods” (U.S. Department of Energy)
- “Preliminary NRDA on the 1993 Neches River Oil Spill in Texas” (UNOCAL)
- “Natural Resource Damages from the 1992 Avila Beach Oil Spill in California” (UNOCAL)
- “Technical Support on the Natural Resource Damages from the 1991 *Haven* Oil Spill in Italy” (Arthur D. Little)
- “NRDA Workshops, Training, and Guidance Materials for DOE Staff and Contractors” (U.S. Department of Energy)
- “Review of NRDA Compensation Formulas” (American Petroleum Institute)
- “NRDA Support on the 1990 *American Trader* Oil Spill in California” (Baker & Hostetler McCutchen Black, representing British Petroleum of America, and Williams Woolley Cogswell Nakazawa & Russell, representing American Trading and Transportation Co.)

- “Recreational Use and Valuation Survey for Allegheny, Monongahela, and Ohio Rivers” (Ohio River Valley Water Sanitation Commission)
- “Review of Damage Estimates for the 1989 *World Prodigy* Oil Spill in Rhode Island” (Bingham, Dana & Gould, representing Ballard Shipping Company)
- “Analysis of Proposed Revisions in 1991 NRDA Regulations” (General Electric)
- “Studies of Natural Resource Damages from the 1989 *Exxon Valdez* Oil Spill in Alaska” (Exxon Company, USA)
- “Natural Resource Injury and Damage Assessment Manual” (Petroleum Environmental Research Forum)
- “Environmental Damages of the 1989 *Kanchenjunga* Oil Spill in Saudi Arabia” (Charles Taylor & Company, London, England)
- “Scoping Study of Natural Resource Damages from the 1988 Martinez Oil Spill in California” (Shell Oil Company)
- “Social Cost of the 1982 Formaldehyde Release into the Russian River in California” (U.S. Department of Justice)

Areas of Specialization

Natural Resource Economics

Assessing natural resource damages as a result of oil spills, hazardous substance releases, and coral-reef groundings

Reviewing/critiquing Trustee assessments of natural resource damages as a result of oil spills, hazardous substance releases, and coral-reef groundings

Reviewing proposed regulations and guidance for assessing natural resource damages

Developing guidance and providing training on assessing natural resource damages

Collecting and evaluating existing information on the characteristics and use of recreation areas

Identifying and evaluating relevant valuation studies in the economic literature for transfer to natural resource damage applications

Estimating nonmarket values for recreation activities

Analyzing contingent-valuation and travel-cost data on the value of recreation activities

Using conjoint analysis and habitat equivalency analysis (HEA) to determine the appropriate scale of compensatory restoration actions for losses of natural resource services

Evaluating conceptual and empirical issues associated with estimating nonuse values

Using hedonic price method to estimate reductions in property values attributable to hazardous-substance releases

Litigation Support

Participating in settlement discussions/meetings with Trustees on natural resource damages and third-party claims

Evaluating claims of lost tax revenue following oil spills and hazardous-substance releases

Evaluating claims of lost business income following oil spills and hazardous-substance releases

Analyzing claims of reduced property values following hazardous-substance releases

Providing deposition and trial testimony on natural resource damages, tax losses, business-income losses, and property-value reductions as a result of oil spills and hazardous-substance releases

Developing questions for deposing or cross-examining economic experts in natural resource damage cases and third-party lawsuits

Survey Design and Administration

Developing and implementing protocols for counting users of recreation sites

Developing and administering face-to-face surveys with users of recreation sites

Training and monitoring counters of recreators and interviewers for recreation surveys

Developing and implementing telephone and mail surveys administered to recreators

Designing and conducting focus groups and pre-tests of survey questionnaires

Developing and implementing self-administered, computerized surveys of the general public

Professional Associations

- American Agricultural Economics Association (AAEA)
- Association of Environmental and Resources Economists (AERE)

Honors and Awards

- Ford Fellowship, Economics, University of Wisconsin, 1972–1973
- B.A. with Departmental Honors in Economics, University of Missouri, 1971
- Curators Scholarships, University of Missouri, 1968–1971
- Faculty Citation for Academic Excellence, University of Missouri, 1968

Testimony

The Municipalities of Rull and Gilman, et al. v. Kyowa, et al., Federated States of Micronesia Supreme Court, Trial Division – State of Yap, Civil Action No. 2003-3002

Trial Testimony: November 22–23, 2004 (Expert Witness)

Deposition Testimony: March 16, 2005 (Expert Witness)

State of Oregon v. Taiheiyo Kaiun Co., Ltd., et al., Circuit Court of the State of Oregon for Coos County, Case No. 01 CV 0383

Trial Testimony: November 6, 2002 (Expert Witness)

State of New Mexico, et al. v. General Electric Company, et al., U. S. District Court for the District of New Mexico, Case No. CV 99-1118 and CV 99-1254 (Consolidated by order on 6/14/00)

Deposition Testimony: February 26, 2002 (Expert Witness)

State of Wisconsin v. Hydrite Chemical Company v. Aetna Casualty & Surety Company, et al., Wisconsin Circuit Court for Dane County, Case No. 95-CV-2911

Deposition Testimony: December 17, 1999 (Expert Witness)

State of California et al. v. BP America et al., California Superior Court for Orange County, Case No. 646339

Deposition Testimony: December 10 to 13, 1996 (Expert Witness)

July 23, 1997 (Custodian of Records)

August 4 and 5, 1997 (Expert Witness)

Trial Testimony: November 13, 14, 17, and 20, 1997
(Expert Witness)

Expert Reports

United States v. Southern California Edison. Prepared for Stevens & O'Connell. August 6 and October 5, 2004.

The Municipalities of Rull and Gilman, et al. v. Kyowa, et al. Prepared for Carlsmith Ball, LLP. May 28 and June 29, 2004.

Opinions on the Potential Tourism Impacts of the 2002 Oil Spill in St. Eustatius. Prepared for Steers/Cariconsult International Limited. June 18, 2003.

SCDHEC v. Western Atlas, Inc. et al. Prepared for Northrop Grumman Corporation. April 3 and May 22, 2003.

Preliminary Opinions on Potential Revenue Losses to Statia Marine Park from the 2002 Paulina Oil Spill. Prepared for Steers/Cariconsult International Limited. March 8, 2002.

State of New Mexico v. General Electric Company, et al. Prepared for General Electric. February 1, 2002.

Opinions on Potential Natural Resource Damages Associated with the Rocky Hill Municipal Well and Montgomery Township Housing Development Superfund Sites. Prepared for Princeton Gamma Tech. April 16, 2001.

Opinions on Potential Natural Resource Damages from Hazardous Substance Releases at Hydrite's Cottage Grove (WI) Facility. Prepared for a consortium of insurance carriers. December 8, 1999.

Selected Publications

Dunford, R.W., T.C. Ginn, and W.H. Desvousges. 2004. "The Use of Habitat Equivalency Analysis in Natural Resource Damage Assessments." *Ecological Economics* 48(1):49–70.

Iannuzzi, T.J., D.F. Ludwig, J.C. Kinnell, J.M. Wallin, W.H. Desvousges, and R.W. Dunford. 2002. *A Common Tragedy: History of an Urban River*. Amherst, MA: Amherst Scientific Publishers.

Johnson, F.R., R.W. Dunford, W.H. Desvousges, and H.S. Banzhaf. 2001. "The Role of Knowledge in Assessing Nonuse Damages: A Case Study of the Lower Passaic River." *Growth and Change* 32(Winter):43–68.

Dunford, R.W. 2000. "Estimating Ground-Water Damages from Hazardous-Substance Releases." *Journal of Water Resources Planning and Management* 126(6):366–373.

Dunford, R.W. 1999. "The American Trader Oil Spill: An Alternative View of Recreation Use Damages." *AERE Newsletter* 19(1):12–20.

Dunford, R.W., and J.A. Murdock. 1997. "Assessing Groundwater Damages From Hazardous-Substance Releases." *Water Resources Update* 109:25–33.

Dunford, R.W., F.R. Johnson, and E.S. West. 1997. "Whose Losses Count in Natural Resource Damages?" *Contemporary Economic Policy* 15(4):77–87.

- Boyle, K.J., F.R. Johnson, D.W. McCollum, W.H. Desvousges, R.W. Dunford, and S.P. Hudson. 1996. "Valuing Public Goods: Discrete Versus Continuous Contingent-Valuation Responses." *Land Economics* 72(3):381–96
- Boyle, K.J., W.H. Desvousges, F.R. Johnson, R.W. Dunford, and S.P. Hudson. 1994. "An Investigation of Part-Whole Biases in Contingent Valuation Studies." *Journal of Environmental Economics and Management* 27(1):64–83.
- Sharples, F.E., R.W. Dunford, J.J. Bascietto, and G.W. Suter, II. 1993. "Integrating Natural Resource Damage Assessment and Environmental Restoration at Federal Facilities." *Federal Facilities Environmental Journal* (Autumn):295–317.
- Desvousges, W.H., F.R. Johnson, R.W. Dunford, K.J. Boyle, S.P. Hudson, and K.N. Wilson. 1993. "Measuring Natural Resource Damages with Contingent Valuation: Tests of Validity and Reliability." In *Contingent Valuation: A Critical Assessment*, J.A. Hausman, ed. Amsterdam: Elsevier.
- Desvousges, W.H., A.R. Gable, R.W. Dunford, and S.P. Hudson. 1993. "Contingent Valuation: The Wrong Tool for Damage Assessment." *Choices* 8(2):9–11.
- Desvousges, W.H., and R.W. Dunford. 1992. "Russian River Basin Formaldehyde Release." In *Natural Resource Damages: Law and Economics*, K.M. Ward and J.W. Duffield, eds. New York: John Wiley and Sons.
- Dunford, R.W. 1992. "Natural Resource Damages from Oil Spills." In *Innovations in Environmental Policy*, T. Tietenberg, ed. London, England: Edward Elgar Publishing, Ltd.
- Dunford, R.W. 1992. "Natural Resource Damages from Oil Spills: A Comparison of the Ohio Decision and the Oil Pollution Act." *Environmental Law Reporter* 22(4):10263–10267.
- Dunford, R.W. 1989. "Oil Companies May Underestimate Cost of Spills." *Wall Street Journal*. Also published in *Petroleum Accounting and Financial Management Journal* 8(2):7–9.
- Dunford, R.W., D.L. Chicoine, and D.E. Ervin. 1985. "A Critical Review of the Income Capitalization Approach to Use-Value Assessment." In *Property Tax Assessment: Processes, Records, and Land Values*, A. Majchrowicz and R.R. Almy, eds. Chicago, Illinois: Farm Foundation.
- Dunford, R.W., C.E. Marti, and R.C. Mittelhammer. 1985. "A Case Study of Rural Land Prices at the Urban Fringe Including Subjective Buyer Expectations." *Land Economics* 61(1):10–16.
- Dunford, R.W. 1984. "Property Tax Relief Programs to Preserve Farmlands." In *Protecting Farmlands*, F. Steiner and J. Theilacker, eds. Westport, Connecticut: AVI Publishing Company.
- Dunford, R.W., and D.E. O'Neill. 1981. "An Analysis of Alternative Approaches to Estimating Agricultural Use Values." *Agricultural Law Journal* 2(2):285–307.

- Dunford, R.W., and D.C. Marousek. 1981. "Sub-County Property Tax Shifts Attributable to Use-Value Assessments on Farmland." *Land Economics* 57(2):221–229.
- Dunford, R.W. 1981. "Farmland Retention: Efficiency vs. Equity." In *Economics, Ethics, Ecology: Roots of Productive Conservation*, W. Jeske, ed. Ankeny, Iowa: Soil Conservation Society of America.
- Dunford, R.W. 1980. "A Survey of Property Tax Relief Programs for the Retention of Agricultural and Open Space Lands." *Gonzaga Law Rev.* 15(3):675–699.
- Dunford, R.W. 1980. "The Value of Unrealized Farmland Capital Gains: Comment." *American Journal of Agricultural Economics* 62(2):260–262.

Selected Reports and Working Papers

- Dunford, R.W. 2006. *Net Environmental Benefit Analysis of Capping the Middle Reach of Bayou Trepagnier*. Prepared for Motiva Enterprises.
- Dunford, R.W., L.A. Hostetter, & P.R. Krause. 2005. *Using Habitat Equivalency Analysis to Compare the Net Environmental Impacts of the 4H Shell Mounds Proposed Project and Alternatives*. Prepared for Chevron.
- Sunding, D.L., R.W. Dunford, & J.L. Glenn. 2005. *Proposed Critical Habitat Designation for the Southwestern Willow Flycatcher: Potential Economic Impacts on Phelps Dodge Corporation Operations*. Prepared for Phelps Dodge Corporation.
- Dunford, R.W. 2004. *Using Habitat Equivalency Analysis to Compare the Net Environmental Impacts of the 4H Shell Mounds Program Alternatives*. Prepared for ChevronTexaco.
- Dunford, R.W. 2002. *Preliminary Assessment of Potential Economic Losses from the 2002 Paulina Oil Spill*. Prepared for Steers/Cariconsult International Limited.
- Desvousges, W.H., R.W. Dunford, K.E. Mathews, C.L. Taylor, and J.L. Teague. 1999. *A Preliminary Economic Evaluation of New Jersey's Proposed Groundwater Damage Assessment Process*. Prepared for New Jersey Site Remediation Industry Network.
- Dunford, R.W., E.S. West, and R.J. Katerberg. 1998. *Natural Resource Damages: A Bibliography of Law Articles*. TER General Working Paper No. G-9801. Durham, NC: Triangle Economic Research.
- Dunford, R.W., W.H. Desvousges, F.R. Johnson, E.E. Fries, H.J. Michael, and K.E. Mathews. 1997. *Comments on NOAA's Draft Compensatory Restoration Guidance Document*. Submitted to National Oceanic and Atmospheric Administration, Silver Spring, MD.
- Dunford, R.W., A.R. Gable, S.P. Hudson, W.H. Desvousges, and F.R. Johnson. 1996. *A Review of the 1996 Contingent Valuation Study on the Value of*

Preventing Oil Spills Along California's Central Coast. Prepared for Ad Hoc Industry Group. Durham NC: Triangle Economic Research.

Dunford, R.W., K.E. Mathews, A.R. Gable, E.E. Fries, F.R. Johnson, and W.H. Desvousges. 1995. *Nonuse Values for Nonenvironmental Commodities: Preliminary Contingent Valuation Results for Avoiding Job Losses.* Prepared for the U.S. Department of Energy, Washington, DC.

Dunford, R.W., K.E. Mathews, A.R. Gable, E.E. Fries, F.R. Johnson, and W.H. Desvousges. 1995. *Nonuse Values for Nonenvironmental Commodities: Preliminary Conjoint Survey Results.* Prepared for the U.S. Department of Energy, Washington, DC.

Barnthouse, L.W., J.J. Bascietto, S.A. Deppen, R.W. Dunford, D.E. Gray, and F.E. Sharples. 1995. *Natural Resources Damage Assessment Guidance Implementation Project: Savannah River Site.* Prepared for U.S. Department of Energy, Washington, DC.

Mathews, K.E., F.R. Johnson, R.W. Dunford, and W.H. Desvousges. 1995. *The Potential Role of Conjoint Analysis in Natural Resource Damage Assessments.* TER General Working Paper No. G-9503. Durham, NC: Triangle Economic Research.

Desvousges, W.H., K.E. Mathews, R.W. Dunford, R.R. Russell, and H.L. James. 1995. *Comments on NOAA's Proposed NRDA Rule Under the Oil Pollution Act: Executive Summary.* Durham, NC: Triangle Economic Research.

Desvousges, W.H., K.E. Mathews, R.W. Dunford, R.R. Russell, and H.L. James. 1995. *Comments on NOAA's Proposed NRDA Rule Under the Oil Pollution Act.* Submitted to National Oceanic and Atmospheric Administration, Silver Spring, MD.

Desvousges, W.H., R.W. Dunford, R.R. Russell, and S.P. Hudson. 1994. *Review of "Technical Memorandum: Quantification and Scaling of Resource Services."* Prepared for ASARCO Incorporated, Champion International Corporation, Kaiser Aluminum & Chemical Corporation, Occidental Chemical Corporation, and the City of Tacoma.

Desvousges, W.H., S.P. Hudson, S.K. Snow, R.W. Dunford, A.R. Gable, M.C. Ruby, and R.A. Sandefur. 1994. *Comments on the National Oceanic and Atmospheric Administration's Natural Resource Damage Assessment Proposed Rule.* Submitted to the Damage Assessment Regulations Team, Silver Spring, MD.

Dunford, R.W., and A.K. Miedema. 1993. "Comparing the Environmental Performance of Public Utilities: Issues and Alternatives." Prepared for Niagara Mohawk Power Corporation.

Desvousges, W.H., F.R. Johnson, R.W. Dunford, K.N. Wilson, H.S. Banzhaf, and K.J. Stettler. 1992. *Using Contingent Valuation to Measure Nonuse Damages: An Assessment of Validity and Reliability.* Submitted to the National Oceanic and Atmospheric Administration Contingent Valuation Panel pursuant to *Federal Register* Notice of June 1, 1992.

- Desvousges, W.H., F.R. Johnson, R.W. Dunford, K.J. Boyle, S.P. Hudson, and K.N. Wilson. 1992. *Measuring Nonuse Damages Using Contingent Valuation: An Experimental Evaluation of Accuracy*. Research Triangle Institute Monograph 92-1, prepared for Exxon Company, USA.
- Desvousges, W.H., and R.W. Dunford. 1991. *Comments on the Proposed Revision in the NRDA Rule Pursuant to the 1989 Ohio vs. Interior Ruling*. Submitted to the U.S. Department of the Interior, Washington, DC.
- Robilliard, G.A., W.H. Desvousges, R.W. Dunford, and J. Milliken. 1991. *Natural Resource Injury and Damage Assessment Guidance Manual*. Prepared for the Petroleum Environmental Research Forum.
- Baker, R.D., R.W. Dunford, and J.L. Warren. 1991. *Alternatives for Measuring Hazardous Waste Reduction*. Prepared for the Illinois Hazardous Waste Research and Information Center, Savoy, IL.
- Desvousges, W.H., R.W. Dunford, and J.L. Domanico. 1989. *Measuring Natural Resource Damages: An Economic Appraisal*. API Report No. 4490. Washington, DC: American Petroleum Institute.
- Dunford, R.W., and D.K. Long. 1989. *Background on the National Survey of Solid Wastes from Mineral Processing Facilities*. Prepared for the Office of Solid Waste, U.S. Environmental Protection Agency, Washington, DC.
- Dunford, R.W., B.L. Jellicorse, K.B. Heller, and P.T. Neely. 1989. *Economic Impact Analysis of Air Emissions Controls on Municipal Solid Waste Landfills*. Prepared for the Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Durham, NC.
- Dunford, R.W., A.S. Ross, and L.D. McNeilly. February 1988. *Economic Analysis of Candidate Ethylene Oxide NESHAP Controls on Commercial Sterilization*. Prepared for the Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Durham, NC.
- Desvousges, W.H., R.W. Dunford, and H.H. Rink, III. 1987. *The Social Cost of a Formaldehyde Release in the Russian River Basin*. Prepared for the U.S. Department of Justice, Washington, DC.
- Desvousges, W.H., R.W. Dunford, J. Frey, H. Kunreuther, R. Kasperson, and P. Slovic. 1987. *High-Level Nuclear Waste Repository Risks: Focus Group Findings and Implications for Surveys*. Prepared for Mountain West and the State of Nevada.
- Dunford, R.W., L.D. McNeilly, H.H. Mims, Jr., and P.P. Jacobs. 1986. *Economic Analysis of Candidate Hazardous Organics NESHAP Controls*. Prepared for the Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Durham, NC.
- Desvousges, W.H., R.W. Dunford, J. Frey, H. Kunreuther, R. Kasperson, and P. Slovic. 1986. *High Level Nuclear Waste Risk Surveys: Integrated Survey Plan*. Prepared for Mountain West and the State of Nevada.

Selected Papers Presented

- Dunford, R.W. 2006. "An Economic Evaluation of Net Environmental Benefit Analysis for Choosing Among Environmental Projects." Presented at the Western Agricultural Economics Association Annual Meeting, Anchorage, Alaska. June.
- Dunford, R.W., W.R. Gala, and P.A.H. Samuels. 2004. "Compensatory Restoration: An Alternative to the Standard Ecological Risk Characterization and Management Approach." Presented at the International Petroleum Environmental Conference, Albuquerque, New Mexico. October.
- Dunford, R.W. 2004. "Estimating and Managing Groundwater Damages." Presented at the Environmental Law Section of Colorado Bar Association. January.
- Freeman, M.L., and R.W. Dunford. 2003. "The *New Carissa* Shipwreck: Aesthetic Impact on Coastal Recreation." Presented at the American Agricultural Economics Association Annual Meeting, Montreal, Canada. July.
- Dunford, R.W. 2003. "Estimating Compensatory Damages from MTBE Contamination." Presented at the National Ground Water Association's MTBE Conference, Baltimore, Maryland. June.
- Dunford, R.W., G.S. Mauseth, P.B. Ung, and J.A. Cook. 2003. "Challenges in Using Habitat Equivalency Analysis for Scaling Compensatory Restoration." Presented at the International Oil Spill Conference, Vancouver, British Columbia, Canada. April.
- Dunford, R.W., T.J. Havranek, and M.C. Schiavo. 2002. "A Comprehensive Environmental Liability Management Strategy for Hazardous-Substance Releases." Presented at the Western Economics Association International meeting, Seattle, Washington. June.
- Dunford, R.W., and M.L. Freeman. 2001. "A Statistical Model for Estimating Natural Resource Damages from Oil Spills." Presented at the International Oil Spill Conference, Tampa, Florida. March.
- Dunford, R.W., and T.H. Knight. 2001. "A Regression Model to Estimate Baseline Use of a Recreation Area Following an Oil Spill." Presented at the International Oil Spill Conference, Tampa, Florida. March.
- Dunford, R.W., T.H. Knight, and J.A. Murdock. 1999. "Random Utility Models and Household Decisionmaking: The Effect of Party Composition on Beach Recreation Values." Presented at the American Agricultural Economics Association meeting, Nashville, Tennessee. August.
- Dunford, R.W., and J.A. Friesen. 1999. "Estimating Baseline Human Use Services for Natural Resource Damage Assessments." Presented at the International Oil Spill Conference, Seattle, Washington. March.
- Bingham, M.J., D.J. MacNair, and R.W. Dunford. 1998. "Mad About Blue: An Empirical Comparison of Minimum Absolute Deviations and Ordinary Least

- Squares Estimates of Consumer Surplus." Presented at the American Agricultural Economics Association meeting, Salt Lake City, Utah. August.
- Mathews, K.E., F.R. Johnson, and R.W. Dunford. 1998. "Jobs or Salmon? The Reliability of Nonuse Stated Preferences." Presented at the American Agricultural Economics Association meeting, Salt Lake City, Utah. August.
- Dunford, R.W., and R.B. Fowler. 1996. "An Analysis of Intrastate and Interstate Differences in Beach-Use Values." Presented at the American Agricultural Economics Association meeting, San Antonio, Texas. July.
- Dunford, R.W., R.A. Sandefur, and F.R. Johnson. 1995. "Whose Losses Count in Natural Resource Damages? A View from the Trenches." Presented at the AERE Workshop, Annapolis, Maryland. June.
- Dunford, R.W., K.E. Mathews, and H.S. Banzhaf. 1995. "A Cooperative Approach for Measuring Direct-Use Damages: The 1992 Avila Beach (California) Oil Spill." Presented at the International Oil Spill Conference, Long Beach, California. February.
- Boyle, K.J., F.R. Johnson, D.W. McCollum, W.H. Desvousges, R.W. Dunford, and S.P. Hudson. 1993. "Valuing Public Goods: Discrete Versus Continuous Contingent Valuation Responses." Presented at American Agricultural Economics Association meeting, Orlando, Florida. August.
- Bascietto, J.J., R.W. Dunford, F.E. Sharples, and G.W. Suter, II. 1993. "Integrating Natural Resource Damage Assessment and Environmental Restoration Activities at DOE Facilities." Presented at the Federal Environmental Restoration Conference, Washington, DC. May.
- Robilliard, G.A., M. Fischel, W.H. Desvousges, R.W. Dunford, and K.E. Mathews. 1993. "Evaluation of Compensation Formulae to Measure Natural Resource Damages." Presented at the International Oil Spill Conference, Tampa, Florida. March.
- Dunford, R.W., S.P. Hudson, and W.H. Desvousges. 1993. "Experimental Contingent Values for Reducing Environmental Damage from Oil Spills." Presented at the International Oil Spill Conference, Tampa, Florida. March.
- Desvousges, W.H., R.W. Dunford, K.E. Mathews, and H.S. Banzhaf. 1993. "NRDA Case Study: The Arthur Kill Oil Spill." Presented at the International Oil Spill Conference, Tampa, Florida. March.
- Desvousges, W.H., F.R. Johnson, R.W. Dunford, K.J. Boyle, and S.P. Hudson. 1992. "The Validity of Expressed Nonuse Values for Environmental Commodities." Presented at the American Agricultural Economics Association meetings, Baltimore, Maryland. August.
- Desvousges, W.H., F.R. Johnson, R.W. Dunford, K.J. Boyle, S.P. Hudson, and K.N. Wilson. 1992. "Measuring Natural Resource Damages with Contingent Valuation: Tests of Validity and Reliability." Presented at the Cambridge Economics, Incorporated, Symposium, *Contingent Valuation: A Critical Assessment*. Washington, DC. April.

- Dunford, R.W., and W.H. Desvousges. 1992. "Oil Spill Liability: Recent Legal and Economic Developments." Presented at the American Economics Association meeting, New Orleans, Louisiana. January.
- Dunford, R.W. 1991. "Liability Law in the Marine Environment: Natural Resource Damages as an Oil Spill Deterrent." Presented at the Environmental Law Workshop, Woods Hole Oceanographic Institution. April.
- Dunford, R.W., S.P. Hudson, and W.H. Desvousges. 1991. "Linkages Between Oil Spill Removal Activities and Natural Resource Damages." Presented at the International Oil Spill Conference, San Diego, California. March.

Selected Presentations

- Dunford, R.W. 2006. "Getting to Restoration." Presented at the 2006 NRD Symposium in Fairfax, Virginia. July.
- Dunford, R.W. 2001. "The Economic Costs of U.S. Oil Spills." Presented at the First International Conference on Marine Environmental Challenges, Plymouth, Massachusetts. February.
- Bingham, M.F., D.J. MacNair, and R.W. Dunford. 1998. "PARVS Data and Alternative Travel Cost Valuation Methods." Presented at the American Agricultural Economics Annual Meeting, Salt Lake City, Utah. August.
- Dunford, R.W. 1998. "Assessing Damages From Groundwater Contamination." Presentation at U.S. Department of Energy's NRDA Steering Committee meeting, Fernald, Ohio. May.
- Dunford, R.W. 1998. "Economic Concepts and Tools for Assessing Natural Resource Damages." Presentation at International Business Communications' NRDA conference, Chicago, Illinois. April.
- Dunford, R.W. 1998. "Natural Resource Damage Assessment Process for Groundwater." Presentation to the Louisiana DEQ Office of Waste Services Conference, Lafayette. March.
- Dunford, R.W., K.E. Mathews, and F.R. Johnson. 1997. "Conjoint Analysis: A Technique for Determining Compensatory Restoration." Poster presentation at International Oil Spill Conference, Fort Lauderdale, Florida. April.
- Dunford, R.W. 1996. "Natural Resource Damages: Key Economic Factors." Presentation to the Contaminated Sediments Conference, Seattle, Washington. October.
- Dunford, R.W. 1995. "Preliminary Thoughts on the 1995 NOAA Proposed NRDA Rule." Presentation at NOAA Conference on Proposed NRDA Rule, San Francisco, California, September, and Washington, DC, August.

- Dunford, R.W. 1995. "Economic Perspective on Oil Spill Planning/Response." Presentation at Woodward-Clyde Consultants Oil Spill Planning and Response Workshop, Galveston, Texas. August.
- Dunford, R.W. 1995. "Natural Resource Service Replacement Cost: An Alternative to Estimating Compensable Values?" Presentation at Executive Enterprises NRDA Workshop, Washington, DC. April.
- Dunford, R.W. 1995. "Estimating Natural Resource Use Damages." Presentation at Executive Enterprises NRDA Workshop, Washington, DC. April.
- Dunford, R.W. 1994. "An Overview of DOI's Proposed Great Lakes Environment (GLE) Type A Model." Presentation at U.S. Department of Energy's NRDA Steering Committee meeting, Richland, Washington. October.
- Dunford, R.W. 1994. "Preliminary Assessment of On-Post Biota Impacts from Hazardous Substance Releases at Rocky Mountain Arsenal." Presentation at U.S. Department of Energy's NRDA Steering Committee meeting, Richland, Washington, October.
- Dunford, R.W. 1994. "Assessing Natural Resource Damages from Oil Spills: NOAA's Proposed Compensation Formula." Discussant at the American Agricultural Economics Association meeting, San Diego, California. August.
- Dunford, R.W. 1994. "Recent Developments in the Passive-Use Damages Controversy." Presented at the U.S. Department of Energy's NRDA Steering Committee meeting, Las Vegas, Nevada. April.
- Dunford, R.W. 1994. "An Overview of NOAA's Proposed NRDA Regulations." Presentation at the U.S. Department of Energy's NRDA Steering Committee meeting, Las Vegas, Nevada. April.
- Dunford, R.W. 1993. "Economic Approaches for Measuring Natural Resource Use Damages." Presentation at Society for Environmental Toxicology and Chemistry annual meeting, Houston, Texas. November.
- Dunford, R.W. 1993. "Steps in the NRDA Process." Presentation at "Environmental Restoration '93" conference, Augusta, Georgia. October.
- Dunford, R.W. 1993. "The Role of Economics in Ocean Resource Management." Presentation at "Managing the Coastal Ocean for the 21st Century: North Carolina's Role" conference, Wilmington, North Carolina. May.
- Dunford, R.W. 1993. "Does Contingent Valuation Reliably Measure Nonuse Values: Evidence from a Recent Experiment." Seminar given at Batelle Pacific Northwest Laboratory, Richland, Washington, and at Agricultural Economics Department, Washington State University, Pullman, Washington. April.
- Dunford, R.W. 1993. "Assessing Natural Resource Damages from Oil Spills." Presentation to Environmental Sciences Program, Washington State University, Pullman, Washington. April.

- Dunford, R.W. 1993. "An Overview of the Nonuse Damages Controversy." Presentation at U.S. Department of Energy's NRDA Steering Committee meeting, Boulder, Colorado. March.
- Dunford, R.W. 1993. "Valuing Natural Resource Services: An Overview of Methods and Issues." Seminar given at Oak Ridge National Laboratory, Oak Ridge, Tennessee. January.
- Dunford, R.W. 1992. "Valuing Natural Resource Damages: One Economist's View." Presentation at Executive Enterprises Workshop, San Francisco, California. November.
- Dunford, R.W. 1992. "Measuring Natural Resource Damages with Contingent Valuation: Tests of Validity and Reliability." Presentation to advanced environmental economics class, Duke University, Durham, North Carolina. April.
- Dunford, R.W. 1992. "Economics and NRDA – One Economist's View." Presentation at an NRDA workshop sponsored by ENTRIX, Inc., San Francisco, California. February.
- Dunford, R.W. 1991. "Damage Assessment – Economic Valuation." Presentation at NRDA Workshop sponsored by ENTRIX, Inc., Houston, Texas. November.
- Dunford, R.W., and W.H. Desvousges. 1988. "Measuring Natural Resource Damages from an Oil Spill in the San Francisco Bay Area." Seminar given at the Natural Resource Economics Workshop, North Carolina State University, Raleigh, North Carolina. September.
- Dunford, R.W. 1987. "Natural Resource Damages Under Superfund." Seminar given at the Superfund '87 Conference, Washington, DC. November.

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